

Claims

1. A method for defining at least one parameter for a finite elements analysis (FEA) calculation in a computer-assisted drafting (CAD) program, said method comprising:
- a) determining a body for which said parameter is to be defined, said body being an entity processed by said CAD program; and
- b) using at least one graphical function of said CAD program to define a region within a face of said body, said region being used to define a load/support condition for said FEA calculation.
2. The method of claim 1, wherein step b) comprises at least one of the sub-steps of:
- selecting a type of said load/support condition to be defined,
 - selecting said face of said body, and
 - defining further properties of said load/support condition.
3. The method of claim 1, wherein said load/support condition for said FEA calculation is a condition selected from the following group of conditions:
- a load condition inside said region,
 - a load condition outside of said region,
 - a support condition inside said region, and
 - a support condition outside of said region.
4. The method of claim 1, wherein said graphical function of said CAD program is a function selected from the following group of functions:
- a function of drawing an object, said object being used to delimit said region, and
 - a function of selecting an object, said object being used to delimit said region.

5. The method of claim 4, wherein said object is drawn on said face of said body.
6. The method of claim 4, wherein the view in which said body is displayed by said CAD program is temporarily changed for facilitating drawing of said object.
7. The method of claim 4, comprising the step of calculating a projection of said object onto said face for determining said region.
8. The method of claim 1, wherein said graphical function of said CAD program is a function of subtracting a selected body from said body determined in step a).
9. The method of claim 1, wherein step b) is repeated to define a plurality of regions within at least one face of said body, each region of said plurality of regions being used to define at least one load/support condition for said FEA calculation.
10. The method of claim 9, further comprising at least one of the steps of determining intersection points between the defined plurality of regions and determining overlapping portions of said plurality of regions.
11. The method of claim 9, wherein the loads acting on overlapping portions of said plurality of regions are defined as the sums of the individual loads acting on each region.
12. The method of claim 1, wherein said face of said body is a curved face.
13. The method of claim 1, wherein said region used to define said load/support condition is a curved region.

15. The method of claim 1, wherein mesh elements are generated in a
5 meshing step of said FEA calculation such that the borders of the mesh elements
follow the borders of said region.

17. The computer program product of claim 16, wherein said graphical function of said CAD program is a function selected from the following group of functions:

20 - a function of drawing an object, said object being used to delimit said region, and

- a function of selecting an object, said object being used to delimit said region.

19. The computer program product of claim 18, wherein the loads acting on overlapping portions of said plurality of regions are defined as the sums of the individual loads acting on each region.

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- a function of drawing an object, said object being used to delimit said region, and

22. The apparatus of claim 20, wherein a plurality of regions is defined within at least one face of said body, each region of said plurality of regions being used to define at least one load/support condition for said FEA calculation.

23. The apparatus of claim 22, wherein the loads acting on overlapping portions of said plurality of regions are defined as the sums of the individual loads acting on each region.